

# MB850 INSTRUCTIONS

## IMPORTANT SAFETY WARNINGS

This manual contains important safety instructions. Please read and follow all instructions carefully during installation and operation of the unit. Read this manual thoroughly before attempting to unpack, install, or operate your UPS.

**CAUTION!** To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area free of conductive contaminants. (Please see specifications for acceptable temperature and humidity range).

**CAUTION!** To reduce the risk of electric shock, do not remove the cover except to service the battery. No user serviceable parts are inside except the battery.

**CAUTION!** Some components can be energized by the battery when unit is unplugged.

**CAUTION!** UPS must be connected to an AC power outlet with fuse or circuit breaker protection. Do not plug into an outlet that is not grounded. If you need to de-energize this equipment, turn off and unplug the unit.

**CAUTION!** To avoid electrical shock, turn off the unit and unplug it from the AC power source before servicing the battery or installing a computer component.

**DO NOT USE FOR MEDICAL OR LIFE SUPPORT EQUIPMENT!** Panamax does not sell products for life support or medical applications. DO NOT use in any circumstance that would affect operation or safety of any life support equipment or with any medical applications or patient care.

**DO NOT USE WITH OR NEAR AQUARIUMS!** To reduce the risk of fire or electric shock, do not use with or near an aquarium. Condensation from the aquarium can cause the unit to short out.

**DO NOT USE WITH AMPLIFIERS OR POWERED SUBWOOFERS!** The power demands of these devices will overload and possibly damage the unit.

## INSTALLING YOUR UPS SYSTEM

### UNPACKING

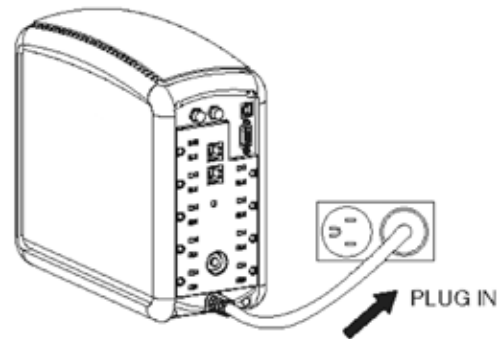
Inspect the UPS upon receipt. The box should contain the following: (1) UPS unit; (1) User's manual; (1) Software CD; (1) USB device cable; (1) Telephone cable; (1) Coaxial Cable

### OVERVIEW

The MB850 provides automatic voltage regulation for inconsistent utility power. The MB850 features 890 Joules of surge protection, and provides battery backup during power outages. The MB850 ensures consistent power to your computer system and its included software will automatically save your open files and shutdown your computer system during a utility power loss.

### AUTOMATIC VOLTAGE REGULATOR

The MB850 stabilizes inconsistent utility power. The incoming utility power may be damaging to important data files, but with Automatic Voltage Regulation, the computer will not experience damaging voltage levels. An Automatic Voltage Regulator automatically increases low or decreases high voltage to a consistent, computer safe 110v/120v. The unit's powerful sealed lead-acid batteries will provide power only if the incoming voltage drops below 90v or increases above 140v

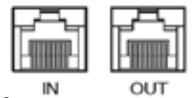


### HARDWARE INSTALLATION GUIDE

**1.** Your new UPS may be used immediately upon receipt. However, recharging the batteries for at least 16 hours is recommended to ensure that the battery's maximum charge capacity is achieved. A loss of charge may occur during shipping and storage. To recharge the batteries, simply leave the unit plugged into an AC outlet. The unit will charge in both the ON as well as the OFF position.

**2.** With the UPS unit off and unplugged, connect equipment that would benefit from battery back-up such as DVR, cable box, satellite receiver, DLP TV or gaming console into the battery power supplied outlets. Plug other equipment into the full-time surge protection outlets.

**3.** To surge protect a network connection, connect a network cable from the wall jack outlet to the IN jack of the UPS. Then connect a network cable from the OUT jack on the UPS to the network device.



**4.** Plug the UPS into a 2 pole, 3 wire grounding receptacle (wall outlet). Make sure the wall branch outlet is protected by a fuse or circuit breaker and does not service equipment with large electrical demands (e.g. refrigerator, copier, etc...).

**5.** Press the power switch to turn on the unit. The unit will beep twice and the power on indicator will illuminate.

**6.** If an overload is detected, an audible alarm will sound and the unit will emit one long beep. To correct this, turn the UPS off and unplug at least one piece of equipment from the battery power supplied outlets. Wait 10 seconds. Make sure the circuit breaker is depressed and then turn the UPS on.

**7.** To maintain optimal battery charge, leave the UPS plugged into an AC outlet at all times.

**8.** To store your UPS for an extended period, cover it and store with the battery fully charged. While in storage recharge the battery every three months to ensure battery life.

## SOFTWARE INSTALLATION GUIDE

### Windows Users

You will need to install the included software on to your computer to take advantage of the UPS computer software control features.

1. Place the CD in your CD drive and wait for the setup wizard to begin. If the wizard does not begin, go to your CD drive in "My Computer" and open the folder and double click "Setup.exe".
2. Follow the instructions on your screen and complete the installation. The default settings offered by the installation wizard are acceptable for most users and can be changed at any time if necessary.
3. After the setup is complete plug the USB cord from your Panamax UPS to an available USB port on your computer.
4. You are now ready to begin using the software.

### Mac Users

When you first get a new Panamax UPS, you'll need to configure the Mac UPS function to control your UPS and begin using it. Configuring the "Energy Saver" UPS Function

1. Plug the USB cord from your Panamax UPS to an available USB port on your computer.
2. Go to "System Preferences" and open the "Energy Saver" control panel.
3. Select settings for "UPS".

You are now ready to configure the settings for the UPS.

## 6 - Full-Time Surge Protection Outlets

The unit has four always on surge suppression outlets.

## 7 - Electrical Wiring Fault Indicator

This LED indicator will illuminate to warn the user that a wiring problem exists, such as bad ground, missing ground or reversed wiring. If this is illuminated, user is advised to disconnect all electrical equipment from the outlet and have an electrician check to ensure the outlet is properly wired. The unit will not provide surge protection without being plugged into a grounded and properly wired wall outlet.

## 8 - Communication Protection Ports

Communication protection ports will protect any standard modem, fax, telephone line, broadband network or Ethernet connection.

## 9 - Circuit Breaker

Located on the back of the UPS, the circuit breaker serves to provide overload and fault protection.

## 10 - Serial/USB Ports to PC

The USB and serial port allow communication from the UPS to a computer. The UPS communicates its status to the software when connected with a USB port. The serial port is only used with third party UPS software such as the Microsoft UPS Power Option of Windows 2000, XP, and Vista. For information on configuring and using the serial port and the Microsoft UPS Power Option or for information regarding ordering a standard serial cable, please contact technical support at [www.panamax.com](http://www.panamax.com). **Note:** The serial port and USB port cannot be used to control two computers concurrently. Only one port will function at a time.

## 11 Coax/Cable/DSS Surge Protection

The Coax/Cable/DSS surge protection ports will protect any cable modem, CATV converter, or DSS receiver.

## 12 Input Power Cord

Connect the unit into an AC outlet.

## BASIC OPERATION

### DESCRIPTION

#### 1 - Power Switch

Used as the master on/off switch for equipment connected to the battery power supplied outlets.

#### 2 - Power On Indicator

This LED is under the power switch. It illuminates when the utility condition is normal and the UPS outlets are providing power, free of surges and spikes.

#### 3 - LCD Module Display.

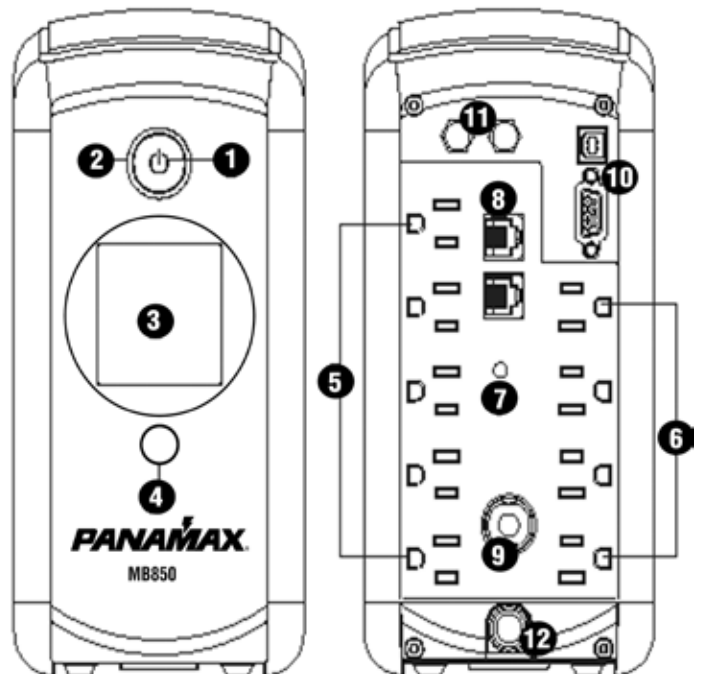
High resolution and intelligent LCD display shows all the UPS information with icons and messages. For more information please check the "Definitions for Illuminated LCD Indicators" section.

#### 4 - LCD Display Toggle/Selected Switch

The switch can be used to select the LCD display contents including Input Voltage, Output Voltage and Estimated Run Time. The toggle frequency is set to one time per second. Holding the switch for more than two seconds while running on battery will silence the buzzer.

#### 5 - Battery and Surge Protected Outlets

The unit has five battery powered/surge protected outlets for connected equipment and ensures temporary uninterrupted operation of your equipment during a power failure



## DEFINITIONS FOR ILLUMINATED LCD INDICATORS



The LCD display indicates a variety of UPS operational conditions. All descriptions apply when the UPS is plugged into an AC outlet and turned on or when the UPS is on battery.

**INPUT voltage meter:** This meter measures the AC voltage that the UPS system is receiving from the utility wall outlet. The UPS is designed, through the use of automatic voltage regulation, to continuously supply connected equipment with stable, 110/120 output voltage. In the event of a complete power loss, severe brownout, or over-voltage, the UPS relies on its internal battery to supply consistent 110/120 output voltage. The INPUT voltage meter can be used as a diagnostic tool to identify poor-quality input power.

**OUTPUT voltage meter:** This meter measures, in real time, the AC voltage that the UPS system is providing to the computer, such as normal line mode, AVR mode, and battery back up mode.

Note: The OUTPUT voltage meter shows the status of the battery back up outlets.

**ESTIMATE RUN TIME:** This displays the run time estimate of the UPS with the current battery capacity and load.

**NORMAL icon:** This icon appears when the UPS is working under normal conditions.

**BATTERY icon:** During a severe brownout or blackout, this icon appears and an alarm sounds (two short beeps followed by a pause) to indicate the UPS is operating from its internal batteries. Projection televisions should be turned off immediately. During a prolonged brownout or blackout, the alarm will sound continuously (and the BATT.CAPACITY meter shows one 20% capacity segment shaded) to indicate the UPS's batteries are nearly out of power. You should save files and turn off your equipment immediately.

**AVR (Automatic Voltage Regulator) icon:** This icon appears whenever your UPS is automatically correcting too low or too high AC line voltage without using battery power. This is a normal, automatic operation of your UPS, and no action is required on your part.

**SILENT MODE icon:** This icon appears whenever the UPS is in silent mode. The buzzer does not beep during silent mode until the battery reaches low capacity.

**OVER LOAD icon:** This icon appears and an alarm sounds to indicate the battery-supplied outlets are overloaded. To clear the overload, unplug some of your equipment from the battery-supplied outlets until the icon turns off and the alarm stops.

**FAULT icon:** This icon appears if there is a problem with the UPS. Contact Panamax customer support for further help.

**BATT. CAPACITY meter:** This meter displays the approximate charge level (in 20% increments) of the UPS's internal battery. During a blackout or severe brownout, the UPS switches to battery power, the BATTERY icon appears, and the charge level decreases.

**LOAD CAPACITY meter:** This meter displays the approximate output load level (in 20% increments) of the UPS's battery outlets.

## REPLACING THE BATTERY

**CAUTION!** Read and follow the IMPORTANT SAFETY INSTRUCTIONS before servicing the battery. Service the battery under the supervision of personnel knowledgeable of batteries and their precautions.

**CAUTION!** Use only the specified type of battery. See your dealer for replacement batteries.

**CAUTION!** The battery may present a risk of electrical shock. Do not dispose of battery in a fire as it may explode. Follow all local ordinances regarding proper disposal of batteries. Almost any retailer that sells lead-acid batteries collects used batteries for recycling, as required by most state laws.

**CAUTION!** Do not open or mutilate the batteries. Released electrolyte is harmful to skin and eyes and may be toxic.

**CAUTION!** A battery can present a high risk of short circuit current and electrical shock. Take the following precautions before replacing the battery:

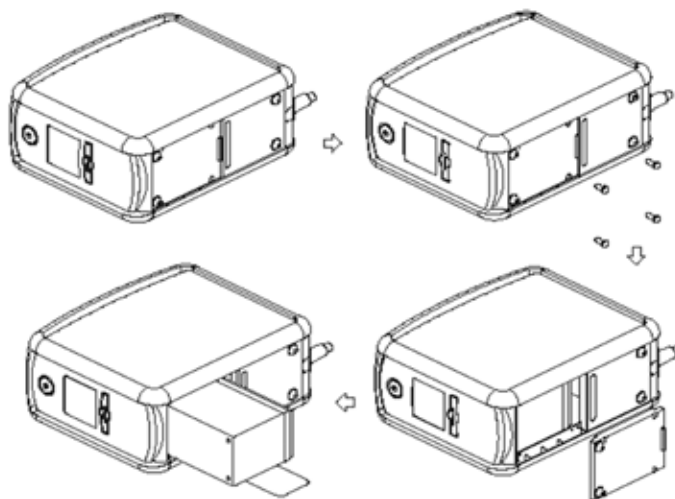
1. Remove all watches, rings or other metal objects.
2. Only use tools with insulated handles.
3. Do not lay tools or metal parts on top of battery or any terminals.
4. Wear rubber gloves and boots.
5. Determine if the battery is inadvertently grounded. If grounded, remove the source of ground.

**CONTACT WITH A GROUNDED BATTERY CAN RESULT IN ELECTRICAL SHOCK!**

## TO REPLACE THE BATTERY

1. Turn off and unplug all connected equipment.
2. Turn the UPS off and unplug it from the AC power source.
3. Turn the UPS upside down.
4. Remove the retaining screws.
5. Slide the battery compartment cover completely off of the unit.
6. Remove the battery from the compartment.
7. Disconnect the battery wires from the battery.
8. Install the replacement battery by connecting the red wire to the positive (+) pole and black wire to the negative (-) pole of the battery.
9. Put the battery back into the compartment.
10. Slide back the battery compartment cover and tighten the retaining screw.
11. Recharge the UPS for 8-16 hours to fully charge the battery.

**REMINDER:** Batteries are consider **HAZARDOUS WASTE** and must be disposed of properly. Almost any retailer that sells lead-acid batteries collects used batteries for recycling, as required by most state laws.



TROUBLE SHOOTING		
Problem	Possible Cause	Solution
Full-time surge protection outlets stop providing power to equipment. Circuit breaker button is projecting from the side of the unit.	Circuit breaker has tripped due to an overload.	Turn the UPS off and unplug at least one piece of equipment. Wait 10 seconds, reset the circuit breaker by depressing the button, and then turn the UPS on.
The UPS does not perform expected runtime.	Battery not fully charged.	Recharge the battery by leaving the UPS plugged in.
	Battery is slightly worn out.	Contact Panamax about replacement batteries at <a href="http://www.panamax.com">www.panamax.com</a>
The UPS will not turn on.	The unit failed a self test.	Turn the UPS off. Wait 10 seconds and then turn the UPS on.
	The unit is not connected to an AC outlet.	The unit must be connected to a 110/120v 60Hz outlet
	The battery is worn out.	Contact Panamax about replacement batteries at <a href="http://www.panamax.com">www.panamax.com</a>
	Mechanical problem.	Contact Panamax at <a href="http://www.panamax.com">www.panamax.com</a>
UPS Software Program is inactive (all icons are gray).	The USB cable is not connected.	Connect the USB cable to the UPS unit and an open USB port on the back of the computer. You must use the cable that came with the unit.
	The USB cable is connected to the wrong port.	Check the back of the computer for an additional USB port. Move the cable to this port.
	The unit is not providing battery power.	Shutdown your computer and turn the UPS off. Wait 10 seconds and turn the UPS back on. This should reset the unit.

TECHNICAL SPECIFICATIONS	
Capacity.....	850VA / 510W
Input Voltage on Utility.....	90V to 140V
Input Frequency.....	60 Hz ± 3 Hz
On-Battery Output Voltage.....	120Vac ± 5%
Transfer Time.....	4ms Typical
Max. Load for UPS Outlets.....	850VA / 510W
Max. Load for Full-Time Surge Protection outlets (9 Outlets).....	12 Amps
On-Battery Output Wave Form .....	Simulated Sine Wave Form
Operating Temperature .....	+ 32°F to 95° F / 0° C to 35° C
Operating Relative Humidity.....	0 to 95% NON-CONDENSING
Size (L x W x H).....	10.24" x 4.33" x 8.70" 26.0 x 11.0 x 22.6cm
Net Weight .....	15.8 lbs
Typical Battery Recharge Time.....	8 hours typical from total discharge
Typical Battery Life.....	3 to 6 years, depending on number of discharge/recharge cycles
Battery Type.....	Spill-proof, Maintenance-free, sealed lead-acid
Safety Approvals.....	UL1778(UPS), cUL107., FCC/DoC Class B

ESTIMATED RUNTIME IN MINUTES	
DLP TV (260 Watts).....	6 Minutes
HD Gaming Console.....	12 Minutes
Satellite Receiver / Cable Box.....	80 Minutes
Media Player.....	80 Minutes
DVR / TiVo®.....	120 Minutes

DEFINITIONS FOR ILLUMINATED LCD INDICATORS			
POWER ON	WIRING FAULT	ALARM	CONDITION
On	On	Off	Normal
On	On / Off	2 beeps per 30 seconds	Utility failure—The UPS is providing battery power to the battery power supplied outlets.
On	On / Off	Rapid beeps	Utility failure—The UPS is providing battery power. The rapid beeps mean that the battery will run out of charge within a few minutes.
On	On / Off	Long Beeps	Battery overload—Occurs in the battery power-supplied outlets. Turn off the UPS and unplug at least one piece of equipment from the UPS. Wait 10 seconds, press the circuit breaker reset button, then turn the UPS on.
On	On	None	Electrical wiring fault—This means there's a wiring problem within the utility AC power outlet. A wiring problem could be a bad ground, missed ground, or reversed wiring. You should disconnect all equipment from the outlet and have it checked by an electrician.